

ABSTRACT

The invention involves methods and materials for extracellularly administering PNA oligomers to living cells. Specifically, the invention provides methods and materials of treating living cells with PNA oligomers such that the oligomers cross biological barriers and engender a biological response in a sequence specific manner. In addition, the invention provides methods and materials for orally administering PNA oligomers to animals such that the oligomers cross biological barriers and engender a biological response in a sequence specific manner. The invention also provides sense and antisense PNA oligomers that modulate transcription and translation, respectively. The invention also provides mismatch PNA oligomers that modulate the degree of an engendered biological response. In addition, the invention provides methods and materials for detecting PNA oligomers within a biological sample collected from an animal. Further, the invention provides methods and materials for screening potential PNA oligomers for the ability to engender a sequence specific biological response. Further, the invention provides methods of identifying the function of polypeptides and of determining the relative turnover rate of functional polypeptides.

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